

EXPERIMENTO 02 - Portas

Sistema Microcontrolados

digitalRead()

```
► int ledPin = 13;  // LED connected to digital pin 13
  int inPin = 7;    // pushbutton connected to digital pin 7
  int val = 0;      // variable to store the read value

void setup() {
  pinMode(ledPin, OUTPUT); // sets the digital pin 13 as output
  pinMode(inPin, INPUT);   // sets the digital pin 7 as input
}

void loop() {
  val = digitalRead(inPin); // read the input pin
  digitalWrite(ledPin, val); // sets the LED to the button's value
}
```

pinMode()

- ▶ mode: INPUT, OUTPUT, or INPUT_PULLUP. See the [Digital Pins](#) page for a more complete description of the functionality.

analogRead()

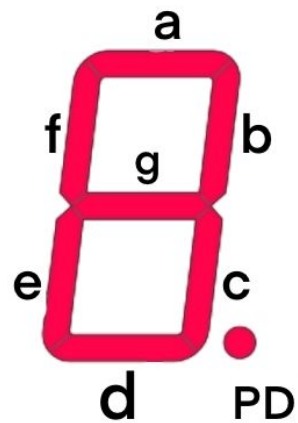
```
► int analogPin = A3; // potentiometer wiper (middle terminal) connected to
  analog pin 3
    // outside leads to ground and +5V
int val = 0; // variable to store the value read

void setup() {
  Serial.begin(9600);          // setup serial
}

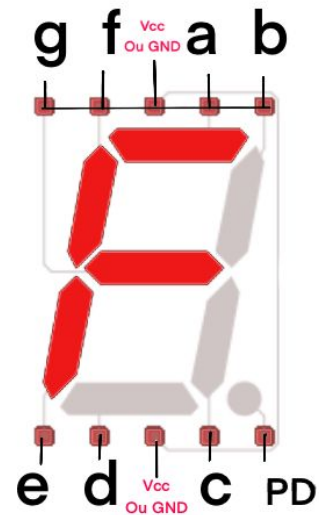
void loop() {
  val = analogRead(analogPin); // read the input pin
  Serial.println(val);         // debug value
}
```

Exercício 4.1

- Crie um script que conta de 00 (zero) até 99 (noventa e nove) em 2 displays 7 segmentos, utilize apenas 9 portas digitais do arduino.



(a)



(b)

map()

Syntax

```
map(value, fromLow, fromHigh, toLow, toHigh)
```

Parameters

`value`: the number to map.

`fromLow`: the lower bound of the value's current range.

`fromHigh`: the upper bound of the value's current range.

`toLow`: the lower bound of the value's target range.

`toHigh`: the upper bound of the value's target range.

Returns

The mapped value. Data type: `long`.

Exercício 4.2

- ▶ Crie um script que recebe o valor analógico de um potenciômetro e exibe uma graduação de 00 (zero) até 99 (noventa e nove) em 2 displays 7 segmentos, utilize apenas 9 portas digitais do arduino.